

Knowledge Attitudes and Barriers of Undergraduate Medical Students Towards Research in University of Babylon

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Abstracts

Objective of the study: To evaluate the attitude and knowledge and barriers of a sample of Iraqi medical undergraduate students(in Babylon college of medicine and college of dentistry) toward research. Across sectional study was done using self-administered pretested questionnaire to measure the knowledge ,barriers and attitudes of students toward research. Two hundred eight students were responded to this study from Hammurabi medical college, and college of dentistry in the University of Babylon. Females constituted 67%. The female to male ratio was 2:1. Regarding barriers to conducting research activities the study revealed that (55.3%)of the students had efficient internet connection and 1.5% had no internet connection at home This study explained that the skill of English language writing is very low, only 5.3% of them mentioned that they had very good skill of writing in 66.5 % mentioned that they had intermediate level of writing English. Regarding speaking English language (which is the language of training for the medical students) only one in fifth of them had good skill in speaking fluent English language. Regarding the attitude 73.3% of the participants had positive attitudes and they mentioned that they are interested in conducting research during undergraduate training.

Keywords: *medical students , undergraduate, knowledge, attitude, barriers , Babylon, Iraq*

Introduction

Research is a systematic process to achieve new knowledge by the use standard methods, simply research can be defined as “a systematic collection of data that uses disciplined methods to answer questions or solve problems ^{1,2}. Health research is an integral component in developing health systems, understanding the roots and consequences of poor health, as well as anticipating and mitigating the effects of various factors on health. Promoting and fostering an environment conducive for health research is mandatory for planning, designing and implementing research and for sharing, using and translating its findings into evidence-informed health policies and cost-effective interventions ³ Health research has an impact on the prevention, diagnosis and treatment of diseases and especially on health care programs policy ^{4,5} Research is essential in all areas of health development. However, medical students frequently lack the time and training on performing research. This is especially prevalent in resource-limited settings ⁶. It is now evident that engaging students in research may lead

to increased participation in research after completion of training ⁷. However, due to the burdens of patient care, students are frequently too busy to find sufficient time for research activities ^{8,9}. Scholarly research activity programs are essential components of the modern undergraduate medical curriculum ¹⁰. Undertaking research can help develop transferable skills such as communication skills, time management, medical statistics, academic writing, systematic thinking, critical appraisal skills, information technology (IT) skills and how to practice evidence-based medicine ^{4,10}. Medical student involvement in research has been declining over the years ¹¹. Medical students’ engagement in research has been associated with the acquisition of teamwork, time management and critical thinking, gaining experience and motivation for a research career, improving critical thinking abilities and fostering positive attitudes toward science and scientific methodology ^{12,16}. Unfortunately, the future of academic medicine has come into question as recent reports point to declining numbers of clinician–scientists in both developed and developing countries ^{17–20}. In conducting research inadequate knowledge is one

of the most common reasons behind suboptimal study design or interpretation²¹⁻²³. The curriculum should be revised to address the gaps in research training. A small group learning model should be adopted to train students in research and provide supervision to group research projects. This model would improve academic learning, skills acquisition, encourage student interest in research, reduce barriers to student research and make better use of limited resources²⁴. The three main factors seen to impact on research success in the literature are: attitude to, knowledge of and barriers toward research²⁵⁻²⁸. This study was done to evaluate the knowledge, attitude to and the barriers toward research among undergraduate medical and dentistry students in Babylon university. To our best knowledge There is no published study to date that assessed the context of research training provided to undergraduate medical students in Iraq.

Methodology

This survey was conducted according to with the Helsinki declaration and national research ethical guidelines. The approval of the proposal for ethical clearance by the Research Technical and Ethical Committee at the Hammurabi College of Medicine. The purpose of the study was explained to the respondents and verbal informed consent was obtained from each one of them after explaining the objectives of the study. The questionnaire was anonymous and took about 10 minutes to complete. This was a cross-sectional study which was conducted at the University of Babylon – Hammurabi college of medicine (the first and second grade undergraduate students) and the college of dentistry (4th and 5th grade students) during the academic year 2019-2020. The research instrument was a self-administered coded questionnaire constructed from variables obtained from literature on the topic. We collected data using the self-administered, structured questionnaire within a span of 6 months. The questionnaire was adapted from the previous studies.^{29,30} The questionnaire consisted of sociodemographic, previous experience of scientific research, knowledge and attitudes toward research, and perceived barrier conducting research. The purpose of the questionnaire was to assess the knowledge and attitude of undergraduate medical student to research; motives for conducting research in the college; and barriers to student research at the university. Data was analyzed using SPSS version 21. Descriptive frequency analysis was performed for all variables in the questionnaire.

Chi-squared tests were conducted to investigate the association between variables and The statistical level of significance was a *p* value less than 0.05

Results

Table 1: shows the distribution of 206 students according to the availability of internet connection, 55.3% of the students have efficient internet connection. 1.5% have no internet what so ever. Figure (1) reveals that females number is higher with male to female ratio 2:1 Table 2: shows the distribution of 206 participates according to their skills in English language (writing, reading, and speaking), less than one third of the students mentioned that they are good in writing English language, the result is similar regarding speaking English. Table 3: explains the Distribution of students according to their attitude towards conducting research during undergraduate study, the table depicts positive attitudes toward research. Table 4 depicts the distribution of students according to exposure to encouragement to conduct research by their tutors only 70 respondents (34.5%) mentioned that the received encouragement from their tutors to participate in research activity while one fifth of them agree that tutors are easily available to supervise research. Only 8.7% of the participants believe that there are many chances are available in the college to involve in research. Regarding the obstacles table 5 shows the distribution of students according to their access to scientific journals and capacity building in research methodologies during their undergraduate study one in sixth 32 (15.8%) said that they have Easy access to scientific journals through university and 72.3% of them said that there was no enough training activities in research methodology and only 7.5% of the respondents had participated in some sort of research activities during their training courses. Table 6 shows that 85% of students believe that research is important for their future medical practice and academic study. Table 7 reveals that only 11% don't know the importance of studying the research methodology the curriculum as a goal for their future career and self-learning. More than half of the study group (57%) believe research will be a career goal for you in the future. The proportion of students who know that studying research methodology will help in engagement in self-learning about research.

Figure (2) shows that 88% of the respondents either disagree or they don't know that there are awards to encourage engage in research.

Figure (3) shows that 3% of participant know that the government support research activities in Iraq.

Table 1: distribution of 206 students according to the availability of internet connection

Internet Connection (total N=206)	N (%)
No internet	3 (1.5)
Slow connection (not always available)	89 (43.2)
High speed connection	114 (55.3)

Table 2: distribution of 206 participates according to their skills in English language (writing, reading, and speaking)

English language skills – Writing (total N=206)	N (%)
Very poor	7 (3.4)
Poor	4 (1.9)
Intermediate	137 (66.5)
Good	47 (22.8)
Very good	11 (5.3)
English language skills – Speaking (total N=206)	N (%)
Very poor	6 (2.9)
Poor	32 (15.5)
Intermediate	122 (59.2)
Good	37 (18)
Very good	9 (4.4)
English language skills – Reading (total N=206)	N (%)
Very poor	5 (2.4)
Poor	11 (5.3)
Intermediate	110 (53.4)
Good	63 (30.6)
Very good	17 (8.3)

Table 3: Distribution of students according to their attitude towards conducting research during undergraduate study.

Research involvement status (total N=206)	N (%)
Not interested in research	55 (26.7)
Interested but don't know how to involve in research	108 (52.4)
Actively looking to involve in research	43 (20.9)

Table 4: Distribution of students according to exposure to encouragement to conduct research by their tutors

Encouragement by academic staff to participate in academic research (total N=203)	N (%)
Encouraged	70 (34.5)
Not encouraged	133 (65.5)
Tutors are easily available to supervise research (Total N=204)	N (%)
Don't know	71 (34.8)
Disagree	42 (20.6)
Average	50 (24.5)
Agree	41 (20.1)
Many chances are available to involve in research (Total N=206)	N (%)
Don't know	70 (34)
Disagree	78 (37.9)
Average	40 (19.4)
Agree	18 (8.7)

Table 5: distribution of students according to the access to scientific journals and capacity building in research methodologies during their undergraduate study.

Easy access to scientific journals through university library (Total N=202)	N (%)
Don't know	40 (19.8)
Disagree	84 (41.6)
Average	46 (22.8)
Agree	32 (15.8)
There are enough training in research methods (Total N=198)	N (%)
Strongly disagree	38 (19.2)
Disagree	97 (49)
Neutral	47 (23.7)
Agree	15 (7.6)
Strongly agree	1 (0.5)
Participated in training course about medical research (Total N=200)	N (%)
Strongly disagree	
Disagree	58 (29)
Neutral	107 (53.5)
Agree	20 (10)
Strongly agree	10 (5)
	5 (2.5)

Table 6: distribution of students according to their believe that research is important for medical practice and academic study.

Research is important in medical practice (total N=201)	N (%)
Strongly disagree	7 (3.5)
Disagree	2 (1)
Neutral	21 (10.4)
Agree	69 (34.3)
Strongly agree	102 (50.7)
Research is important during academic study (Total N=202)	N (%)
Strongly disagree	9 (4.5)
Disagree	7 (3.5)
Neutral	29 (14.4)
Agree	82 (40.6)
Strongly agree	75 37.1)

Discussion

The engagement of undergraduate medical students in scientific health research had been widely advocated in the last decades in order to provide the new generations of physician with knowledge and skills of applying evidence based medicine in their career. In developing countries including Iraq, medical students are less involved in research activities owing to limited resources and other barriers. Attitude of undergraduate medical students and other students in health science, their knowledge about research and the barriers toward this educational activity are three key components that have an impact on research success. In this study there is a positive attitude toward research conducting among the study group (67.7%) of them cited that research is an important tool for undergraduate medical education , this finding goes in line with the finding of other studies ¹⁸ Positive attitude among the study group indicates very good sign to encourage them in this crucial field because negative attitudes toward research serve as an obstacle to learning associated with poor performance in research. There are many barriers mentioned by the participants which are , weak English language skills (writing, reading and speaking) , lack of resources that facilitate the process of conducting research such as high speed internet, award and encouragement in the teaching environment to enhance research work as a learning tool that stimulating critical thinking and help them to gain critical appraisal skills that help in understanding the evidence medicine practice in their future career, these findings are similar to the findings reported by other

researchers ²⁴

Conclusion

The undergraduate medical and dental students had the moderate level of knowledge and positive attitudes toward the conduct of medical research. Lack of competent English language skills (reading, writing and speaking) funding, awarding , poor internet connection and limited access to relevant medical journals and databases were the major barriers.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Hammurabi College of Medicine and all experiments were carried out in accordance with approved guidelines.

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